

The above amendment is submitted to place the claims in substantially the same conditions as to the claims which have been amended under Article 34 in the international application and to remove improper multiple dependency of the claims. An English translation of the annexes of the PCT international preliminary examination report is enclosed. Early and favorable action is awaited.

In the event there are any additional fees required, please charge our Deposit Account No. 01-2340.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

The following claims have been amended as follows:

1. (Amended) A liquid crystal display device comprising a liquid crystal display panel in which a first substrate formed with a signal electrode and a second substrate formed with a counter electrode on one surface respectively are coupled together, with said signal electrode and said counter electrode opposed each other, with a fixed gap therebetween provided by interposing a sealing part at an outer peripheral part of a display area, and a liquid crystal layer is provided in the gap, wherein

said signal electrode is composed of a surrounding electrode formed over almost the whole area of said display area, a pattern electrode isolatedly formed within said surrounding electrode, and a wiring electrode formed across said surrounding electrode with a gap provided between said wiring electrode and said surrounding electrode in order to selectively apply voltage to said pattern electrode,

said counter electrode is provided over the whole area of said display area to face said signal electrode,

said first substrate, said second substrate, said signal electrode and said counter electrode are all transparent,

said liquid crystal layer is a scattering type liquid crystal layer which changes in transmittance and scattering rate depending on existence or absence of application of voltage by means of said signal electrode and said counter electrode, in which transparency increases in a part to which voltage is applied, and

a light source part means which emits linearly polarized light is disposed outside a peripheral part of said liquid crystal display panel, and at least a part of said sealing part facing the light source part means has a light transmitting property to allow linearly polarized light emitted from said light source part means to pass through said sealing part and enter said liquid crystal layer.

2. (Amended) A liquid crystal display device comprising a liquid crystal display panel in which a first substrate formed with a signal electrode and a second substrate formed with a counter electrode on one surface respectively are coupled together, with said signal electrode and said counter electrode opposed each other, with a fixed gap therebetween provided by interposing a sealing part at an outer peripheral part of a display area, and a liquid crystal layer is provided in the gap, wherein

said signal electrode is composed of a pattern electrode isolatedly formed within said display area, and a wiring electrode formed across said display area in order to selectively apply voltage to said pattern electrode,

said counter electrode is provided in an area to face said pattern electrode,

said first substrate, said second substrate, said signal electrode and said counter electrode are all transparent,

said liquid crystal layer is a scattering type liquid crystal layer which changes in transmittance and scattering rate depending on existence or absence of application of voltage by means of said signal electrode and said counter electrode, in which a scattering degree increases in a part to which voltage is applied, and

a light source part means which emits linearly polarized light is disposed outside a peripheral part of said liquid crystal display panel, and at least a part of said sealing part facing the light source part means has a light transmitting property to allow linearly polarized light emitted from said light source part means to pass through said sealing part and enter said liquid crystal layer.

3. (Amended) A liquid crystal display device according to claim 1, wherein
said liquid crystal display panel, in which an outside of said second substrate is a visible side, always presents a condition outside said first substrate to the visible side,
a luminosity of a scattering part, where the transparency does not increase, of said liquid crystal layer becomes higher than luminosities of other parts while ~~said a~~ light source part of said light source means is turned on, and

the luminosity of said scattering part of said liquid crystal layer becomes lower than the luminosities of the other parts while said light source part is turned off.

4. (Amended) A liquid crystal display device according to claim 2, wherein
said liquid crystal display panel, in which an outside of said second substrate is a visible side, always presents a condition outside said first substrate to the visible side,
a luminosity of a scattering part, where the scattering degree is increased, of said liquid crystal layer becomes higher than luminosities of other parts while ~~said a~~ light source part of said light source means is turned on, and

the luminosity of said scattering part of said liquid crystal layer becomes lower than the luminosities of the other parts while said light source part is turned off.

5. (Amended) A liquid crystal display device according to claim 1, wherein
~~a collimate lens for making light from said light source part a ray parallel to said first~~
~~substrate and said second substrate of said liquid crystal display panel is provided between~~ said light
source means comprises a light source part and a polarization separating device disposed between
the light source part and an outer peripheral part of said liquid crystal display panel ~~and said light~~
~~source part.~~

6. (Amended) A liquid crystal display device according to claim 2, wherein
~~a collimate lens for making light from said light source part a ray parallel to said first~~
~~substrate and said second substrate of said liquid crystal display panel is provided between~~ said light
source means comprises a light source part and a polarization separating device disposed between
the light source part and an outer peripheral part of said liquid crystal display panel ~~and said light~~
~~source part.~~

7. (Amended) A liquid crystal display device according to claim + 5, wherein
~~a polarization separating device~~ an optical means composed of a convex lens or a diffuser
is provided between ~~an outer peripheral part of said liquid crystal display panel and said light source~~
~~part~~ said light source part of said light source means and said polarization separating device.

8. (Amended) A liquid crystal display device according to claim 2 6, wherein
~~a polarization separating device~~ an optical means composed of a convex lens or a diffuser
is provided between ~~an outer peripheral part of said liquid crystal display panel and said light source~~
part said light source part of said light source means and said polarization separating device.

9. (Amended) A liquid crystal display device according to claim 7 5, wherein
said scattering type liquid crystal layer of said liquid crystal display panel is a mixed liquid
crystal layer composed of transparent solid substances and a liquid crystal, which is produced by
applying ultraviolet light to liquid composed of liquid crystal and organic monomers, and
said polarization separating device is disposed so that a transmission axis thereof almost
matches with a direction in which a difference between a refractive index of said transparent solid
substance and a refractive index of said liquid crystal of said mixed liquid crystal layer is small.

10. (Amended) A liquid crystal display device according to claim 8 6, wherein
said scattering type liquid crystal layer of said liquid crystal display panel is a mixed liquid
crystal layer composed of transparent solid substances having alignment properties and a liquid
crystal, which is produced by applying ultraviolet light to liquid made by mixing liquid crystal
polymers into liquid crystal and organic monomers, and
said polarization separating device is disposed so that a transmission axis thereof almost
matches with a direction in which a difference between a refractive index of said transparent solid
substance and a refractive index of said liquid crystal of said mixed liquid crystal layer is small.

19. (Amended) A liquid crystal display device according to claim 3 5, wherein
light intensity change means ~~is provided~~ which controls increase and decrease of an intensity
of light to make incident on said liquid crystal display panel ~~from said light source part~~ in accordance
with an intensity of light incident on said liquid crystal display panel from outside said first substrate
is provided in said light source means.

20. (Amended) A liquid crystal display device according to claim 4 6, wherein
light intensity change means ~~is provided~~ which controls increase and decrease of an intensity
of light to make incident on said liquid crystal display panel ~~from said light source part~~ in
accordance with an intensity of light incident on said liquid crystal display panel from outside said
first substrate is provided in said light source means.

21. (Amended) A liquid crystal display device according to claim 19, wherein
said light intensity change means comprises ~~a liquid crystal shutter composed of~~ a liquid
crystal cell provided between said ~~liquid crystal display panel and said light source and polarizers~~
polarization separating device and the light source part, a polarizer arranged on ~~both sides thereof~~
a light source part side of the liquid crystal cell, an exposure meter for detecting the intensity of the
light incident from outside said first substrate, and a liquid crystal driving circuit for changing
voltage applied to said liquid crystal cell in accordance with an output from said exposure meter.

22. (Amended) A liquid crystal display device according to claim 20, wherein

said light intensity change means comprises ~~a liquid crystal shutter composed of~~ a liquid crystal cell provided between said ~~liquid crystal display panel and said light source and polarizers~~ polarization separating device and the light source part, a polarizer arranged on ~~both sides thereof~~ a light source part side of the liquid crystal cell, an exposure meter for detecting the intensity of the light incident from outside said first substrate, and a liquid crystal driving circuit for changing voltage applied to said liquid crystal cell in accordance with an output from said exposure meter.

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